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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/695,386	10/29/2003	Yoshihiro Izumi	1035-476	6812
23117	7590	11/23/2005	EXAMINER	
NIXON & VANDERHYE, PC 901 NORTH GLEBE ROAD, 11TH FLOOR ARLINGTON, VA 22203			YAM, STEPHEN K	
			ART UNIT	PAPER NUMBER
			2878	

DATE MAILED: 11/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	<b>Application No.</b> 10/695,386	<b>Applicant(s)</b> IZUMI, YOSHIHIRO	
	<b>Examiner</b> Stephen Yam	<b>Art Unit</b> 2878	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 12 September 2005.
- 2a) ☐ This action is FINAL.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.  
 4a) Of the above claim(s) 8-13 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>1003.0805</u> | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election without traverse of Claims 1-7 in the reply filed on September 12, 2005 is acknowledged.

### ***Specification***

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi et al. US Patent No. 5,912,465 in view of Kaneko et al. JP05-243547.

Regarding Claims 1 and 7, Kobayashi et al. teach (see Fig. 5 and 8) an image reading device comprising a photoelectric conversion element (C11, S11, T11) having a photosensitive thin-film element (S11) (see Fig. 5) and a capacitor (C11) connected to the photosensitive thin-film transistor (through the top electrodes of the photosensitive thin-film element and the capacitor- see Fig. 8), photoelectric conversion amount detecting means (AMP) (see Fig. 8) for detecting an amount of charge stored in the capacitor (see Col. 10, lines 33-34) that varies

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according to intensity of light projected on the photosensitive thin-film element (see Col. 11, lines 15-18), and control means (SWg, SWs) (see Fig. 8) for reversing the polarity of the stored charge in the capacitor (since the capacitor is switchably coupled to both positive ( $V_g$ ) and negative ( $V_s$ ) voltage sources) with respect to a ground potential. Kobayashi et al. do not teach the photosensitive thin-film element as a photosensitive thin-film transistor, with the capacitor connected to a drain electrode of the photosensitive thin-film transistor, and reversing the polarity with respect to a potential of a source electrode of the photosensitive thin-film transistor. Kaneko et al. teach (see Fig. 7 and 8) a similar device, with a photosensitive element as a photosensitive thin-film transistor (2, 6, 7) (see Fig. 7 and Paragraph 0009-0010) and a capacitor (12) connected to a drain electrode (7) (see Fig. 7) of the photosensitive thin-film transistor, with the potential of a source electrode (6) of the photosensitive thin-film transistor as a ground potential (see Fig. 7). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the photosensitive thin-film transistor and circuit configuration taught by Kaneko et al. in the device of Kobayashi et al., to provide large area sizing and improved exposure and contrast for the imaging array, as taught by Kaneko et al. (see Paragraph 0003).

Regarding Claim 2, Kobayashi et al. teach the control means reversing the polarity of the stored charge in the capacitor every image reading cycle or every multiple image reading cycles (see Col. 10, line 50 to Col. 11, line 18).

Regarding Claims 3 and 4, Kobayashi et al. teach the photoelectric conversion amount detecting means including a charge integration amplifier (AMP) (see Col. 10, lines 55-57) that

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detects charges of either or both positive and negative polarities (since an operational amplifier operates on both positive and negative voltages).

Regarding Claim 5, Kobayashi et al. teach, in order to reverse the polarity of the stored charge in the capacitor, the control means controls a voltage applied to an electrode (bottom) of the capacitor opposite an electrode (top) connected to an electrode (top) of the photosensitive thin-film transistor.

Regarding Claim 6, Kobayashi et al. in view of Kaneko et al. teach the device in Claim 1, according to the appropriate paragraph above. Kobayashi et al. also teach photoelectric conversion amount detecting means including a charge integration amplifier (AMP) (see Col. 10, lines 55-57). Kobayashi et al. do not teach, in order to reverse the polarity of the stored charge in the capacitor, the control means controls a reference voltage of the charge integration amplifier. It is well known in the art that both inputs to an operational amplifier must be equal, and providing a constant voltage on one input would result in an identical voltage on the other input line. It would have been obvious to one of ordinary skill in the art at the time the invention was made to control a reference voltage of the charge integration amplifier in order to reverse the polarity of the stored charge in the capacitor, in the device of Kobayashi et al. in view of Kaneko et al., to provide further integration between the voltage sources, imaging elements, and amplifier.

### ***Conclusion***

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.


Saika et al. US Patent No. 5,184,007, teach an image reading device with a photosensitive thin-film transistor and controlling the voltage to a capacitor.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen Yam whose telephone number is (571)272-2449. The examiner can normally be reached on Monday-Friday 8:30am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Georgia Epps can be reached on (571)272-2328. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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Georgia Epps  
Supervisory Patent Examiner  
Technology Center 2800